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015/032 #2

May 6, 1994

TO: Daron Haddock, Permit Supervisor

FROM: Sharon Falvey, Reclamation Specialist

RE: MRP LBA#9 Submittal Received 12/1/93 Revised 11/01/93, Genwal Coal Company, Crandall Canyon Mine, ACT/015/032, Emery County, Utah

SUMMARY:

This analysis is specific to the needs for an Administrative Completeness Determination pertaining to the LBA submittal. Major deficiencies pertinent to this determination include updating the PHC and monitoring plan, as well as, providing the acid and toxic forming information committed to in the previously approved plan.

The Operator received a renewal of the mining permit on May 19, 1993. In the permit renewal the reformatted MRP was accepted only to the extent that it updates previously approved information and plans. No new proposals were approved with that renewal. A Division Order attached to the permit identifies the April 14, 1993 review deficiencies which are to be completed as identified. The deficiencies specific to the permit renewal have not been completely reviewed to date.

ANALYSIS:**R645-301-731.600. Stream Buffer Zones****Proposal:**

In Section 7.31.6, page 7-45, the Operator states that portions of the road and sediment pond outslope are within 100 ft of Crandall Creek, a perennial stream. The buffer zone signs designate the area beyond which no disturbance shall take place.

Analysis:

The Operator's description does not accurately detail the buffer zones included in the plan. However, the 100 foot buffer zone along Crandall Creek can be determined from the disturbed area boundary shown on Plate 7-5A. According to this map a large area of the sediment pond, part of the road, and the west pad area are within 100 horizontal feet



of the stream. Additional permit operations include the portable pump, NPDES discharge, and outlet culvert UD-1. The Operator should include reference to page 3-9 and 3-10 which identify how impacts are minimized during construction activities. The buffer zone information should also be discussed in terms of final and contemporaneous reclamation.

Other buffer zone areas are in the subsidence plan. The Operator should reference the applicable portions of the plan where buffer zones are identified for protection from subsidence. The areas which are intermittent and are not protected from subsidence should be identified as proposed variances from the buffer zone. The Operator should closely tie the probable impacts from subsidence to the proposed subsidence buffer zone within the intermittent and perennial stream zones, as requested under R645-301-728.

Deficiency:

1. The Operator should include reference to other portions of the plan where buffer zones related to subsidence are addressed. The areas which are intermittent and are not protected from subsidence should be identified as proposed areas of buffer zone variance. Other portions of the plan where applicable maps and text are addressed should be referenced, including pages 3-9 and 3-10 which identify how impacts are minimized during construction activities.

R645-301-728. PHC

Proposal:

The Operator has included additional information in Appendix 7-15.

Analysis:

The analysis provided in Appendix 7-15 Probable Hydrologic Consequences Determination states that the water emitting from springs and seeps in State Lease ML-21568 and ML-21569 as well as surrounding areas have no direct communication with the regional Blackhawk - Starpoint aquifer. The Operator has not included the proposed lease UTU-6082 as part of the PHC discussion. Additionally, the seep/spring survey in Appendix 7-16 shows numerous seeps to issue from the Blackhawk and Starpoint formations.

The Operator states that the wells indicate the potentiometric surface lies 50 to 60 feet below the top of the Starpoint Sandstone, and the Hiawatha seam lies at the base of the

Blackhawk overlying the Starpoint. However, the Operator does not include a discussion of the new drill holes associated with the LBA lease, whether they intercepted water, or whether the LBA lease is the same distance from the potentiometric surface.

The Operator indicates that it is unlikely that the groundwater quantity or quality will be affected by the underground mining operations. The Operator should discuss the reasoning or reference the analysis in the plan which supports the basis for this determination.

To date, the plan indicates the Operator has intercepted significant flows three times. However, the Operator does receive inflows currently which are used in mine operations. The Operator should discuss potential impacts related to closing of the portal for reclamation and the potential to accumulate water in the current workings. The since the Operator is now mining upgradient, the relation of mine workings elevation to the elevation of the portal should be discussed in terms of potential to discharge from the portal.

A discussion of flow from Little Bear Spring was included. It was stated that the present mine workings would not interfere with the Starpoint aquifer and the concerns for diminution and mitigation for the Little Bear Spring flow were discussed. However, the Operator did not state what the future potential impacts to Little Bear Spring are or what discussions and mitigation measures were proposed.

The Operator has not included a discussion of the LBA lease area and sampling for acid and toxic forming constituents within the PHC. Although the Operator indicates no materials will come out of the mine, acid and toxic materials may affect the operational or post reclamation water quality. Should any spring or water source be recharged or intercepted by mining operations acid and toxic forming materials found in the workings could potentially affect water quality of the springs shown to discharge from the Blackhawk.

The Operator has committed to provide additional roof and floor samples from three equally spaced locations within the current mine workings (State lease and Right-of-Way areas), according to the approved plan. These areas have been mined. Yet, no analysis were received. The Operator should provide sampling from the three sites which were committed to (from the State lease and Right-of-Way include sample location). Additionally, the proposed sampling points should be placed on a map for the new LBA leases and may be based on information gathered from the State Lease and Right-of-Way samples.

The analysis in soils section Chapter 2, page 2-9, indicates the applicant has determined the coal to have an acid forming potential. The result of chemical analysis for overburden is stated to be provided on pages 8 and 10 within Appendix 2-3. However, this

information could not be located on the referenced pages.

The Operator has indicated there is some potential for surface water impacts and that those impacts are expected to be minimal. The Operator states the historical data summarized in the annual report shows no indication of mine related impacts on hydrology of the area. No comparisons or summary of data could be found in the annual reports to support this statement. R645-301-728.200 states the PHC determination will be based on hydrologic, geologic and other information collected for the permit application. The Operator has not met the commitment in this plan and should update the PHC using analysis of existing data to support the determinations made.

Determinations were made for Blind Canyon, Crandall Canyon and Horse Creek perennial flow. These determinations are based on data presented in Appendix 7-23. Final determinations are presented on Plate 14-5. Crandall Canyon Indian Creek and two drainages on the west facing slope of East Mountain were measured in October for two consecutive years to determine perennial flows. The Division's requirements applies to intermittent and perennial streams, as well as overall protection of the hydrologic balance. The Operator must summarize existing reference to subsidence within the buffer zone, or otherwise adequately discuss the potential for adverse hydrologic consequences from mining within the buffer zone so that, the Division may make a finding as required under R645-301-731.611.

Appendix 7-48 "Findings from Supplemental Information on Hydrologic Conditions" should be included in the PHC analysis. At a minimum these reports should be cross referenced or combined to provide a clear document. For instance, the potential impacts to surface waters does not consider the potential impacts (from subsidence) identified in Appendix 7-48.

The Operator should summarize the Probable Hydrological Consequences based on the analysis of potential impacts and the mitigation measures used to minimize those impacts. The potential impact of the mining and reclamation operations upon water quality and quantity of surface and ground waters under seasonal flow conditions must be addressed. A useful method to address the regulations is to analyze the potential impacts according to risk. Follow with a discussion of how mining operations minimize the potential impacts and what the resulting probable hydrologic impacts are. The monitoring plan should be developed according to the potential impacts, as required by R645-301-730.

Deficiency:

1. The analysis provided in Appendix 7-15 Probable Hydrologic Consequences

Determination must be updated to include current information presented in the plan; as determined according to R645-301-728.400.

2. The Operator must update the Probable Hydrologic Consequences Determination to include discussions which meet R645-301-728. Indicate whether the new drill holes associated with the LBA lease intercepted water, and the relation to the aquifer and coal in the LBA lease area. The Operator must include a discussion for the LBA area potential impacts on Little Bear Spring flows.
3. The Operator must include a discussion pertinent to the potential for acid and toxic forming constituents within the PHC, as required by R645-301-728.320. Analysis of the potential impacts of reclamation on the groundwater and surface water quality should be discussed. The Operator must provide additional roof and floor samples from three equally spaced locations within the current mine workings (State Lease and Right-of-Way areas), as committed to in the approved plan. The Operator should include mapping of the selected sites, and analysis according to the DOGM guidelines for Topsoil and Overburden. Finally, include the proposed sampling points on a map for the new LBA leases.
4. The Operator states the historical data summarized in the Annual report shows no indication of mine related impacts on hydrology of the area. However, no comparisons or summary of data are presented in the annual report to support this statement. The Operator must meet the requirements of R645-301-728.200 which states the PHC determination will be based on hydrologic, geologic and other information collected for the permit application. Appendix 7-48 "Findings from Supplemental Information on Hydrologic Conditions" should be included or referenced in the PHC analysis.
5. The Operator should include in the PHC a section summarizing existing references for a determination of PHC of the water quality and quantity due to subsidence within 100 feet of perennial and intermittent streams; i.e. buffer zone, or otherwise adequately discuss the potential for adverse hydrologic consequences from subsidence according to R645-301-728.330.

RECOMMENDATION:

It is recommended that the Operator update the PHC and monitoring plan, as well as,

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provide the acid and toxic forming information committed to earlier in the plan.

Previous deficiencies requested the applicant to update the PHC, baseline and monitoring. Although the Operator responded to the Forest Service concerns many Division requests were not met. This has led to an incomplete submittal at this time. For instance, the Horse Canyon Drainage has no baseline water quality information which was requested in a March 31, 1993 deficiency by Jim Smith. Other examples include the missing Acid and Toxic analyses committed to in the previously approved plan and reference to the Annual Report for a summary of the water quality data, although it contains no summary. The Operator has not provided the information committed to in the plan and has not met all deficiencies related to requirements requested in the May 19, 1993 permit. Therefore, it is recommended that the Division specifically indicate to the Operator the plan will not be determined Adequate for Publication until the response to the critical deficiencies is reviewed and determined adequate by the technical staff (i.e. meets minimum baseline requirements and provides the probable hydrologic determination for the permit area based on hydrologic, geologic and other information collected for the permit application).

The Operator should also be made aware that the Division Order attached to the May 19, 1993 permit and subsequent changes to the plan were not fully analyzed within the context of this review. A time line for review of this information should be included in the Technical Deficiency Review or otherwise scheduled.

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